REMARKS/ARGUMENTS

Upon entry of the above amendment, claims 1-11 will have been canceled without prejudice or disclaimer of the subject matter and claims 12-19 will have been newly submitted for consideration by the Examiner. In view of the above, Applicants respectfully request reconsideration of the outstanding objections and rejections of all the claims pending in the present application. Such action is respectfully requested and is now believed to be appropriate and proper.

Initially, Applicants would like to express their appreciation to the Examiner for the detailed Official Action provided, for the acceptance of the drawings filed in the present application on March 20, 2001, and for the acknowledgment of Applicants' claim for priority under 35 U.S.C § 119 and receipt of the certified copy of the priority document in the Official Action.

Applicants further note with appreciation the Examiner's acknowledgment of Applicants' Information Disclosure Statements filed in the present application on May 8, 2003, and December 11, 2003 by the return of the initialed and signed PTO-1449 Forms, and for consideration of the documents cited in the Information Disclosure Statements.

However, Applicants have also filed an Information Disclosure Statement in the present application on June 11, 2001. Thus, Applicants respectfully request that the Examiner explicitly confirm consideration of the document cited therein in the next Official Action of the present application.

Turning to the merits of the action, the Examiner has objected to the drawings, as failing to comply with 37 C.F.R. § 1084(q)(5) because Figure 4 includes reference

character "S 49" not mentioned in the description. By the present amendment, Applicants have amended the specification to add the reference character "S49" in the description in compliance with 37 C.F.R. § 1.121(b). Thus, Applicants respectfully request that the Examiner withdraw the objection to the drawings.

The Examiner also has objected to the Abstract of the Disclosure because of informalities. By the present amendment, Applicants have amended the Abstract of the Disclosure to correct the errors, in accordance with the suggestions of the Examiner. Thus, Applicants respectfully request that the Examiner withdraw the objection to the Abstract of the Disclosure.

The Examiner further has objected to the disclosure of the specification because of a number of informalities. By the present amendment, Applicants have amended the specification to correct the errors, in accordance with the suggestions of the Examiner, and have submitted a substitute specification (clean and marked –up versions) incorporating these amendments, together with a declaration stating that it includes no new matter. Thus, Applicants respectfully request that the Examiner withdraw the objection to the disclosure of the specification.

Furthermore, the Examiner has objected to claims 1-11 because of language informalities. By the present amendment, Applicants have canceled claims 1-11 without prejudice or disclaimer. Thus, Applicants respectfully submit that this objection has been rendered moot.

Moreover, the Examiner has rejected claims 1, 3, 5, 9, and 11 under 35 U.S.C § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. By the

present amendment, Applicants have canceled claims 1, 3, 5, 9, and 11 without prejudice or disclaimer. Thus, Applicants respectfully submit that this rejection has been rendered moot. The newly submitted claims are free from any basis for objection or for rejection under 35 U.S.C. § 112.

The Examiner has rejected claims 1-5 and 9-11 under 35 U.S.C § 102(b), as being anticipated by DO et al. (International Publication No. WO 99/17493). The Examiner also has rejected claims 6-8 under 35 U.S.C § 103(a), as being unpatentable over DO et al. (International Publication No. WO 99/17493).

As noted above, Applicants have canceled these rejected claims and have submitted new claims 12-19. Applicants respectfully traverse the above rejections based on the pending claims 12-19 and will discuss the rejection with respect to the pending claims in the present application as will be set forth herein below. The newly added claims merely clarify the subject matter recited in the canceled claims, but do not significantly narrow the scope of the claims.

Applicants' claims relate to a modem apparatus operating in accordance with an ADSL system that receives an initializing signal utilized for the ADSL system. The initializing signal includes a first data unit without a cyclic prefix signal and a second data unit with the cyclic prefix signal. The second data unit is received following the first data unit. The cyclic prefix signal is in front of the second data unit and comprises a same data as data of a data unit portion at a rear of the second data unit.

The modem apparatus further comprises a sampler which samples the received initializing signal in units of a predetermined number of samples. The predetermined number of samples corresponds to one data unit. The modem apparatus also

comprises a difference calculator which calculates a difference between a sample of a present data unit and a sample spaced from the present sample by the predetermined number of samples. The modem apparatus further comprises a multiplier which squares the difference calculated by the difference calculator.

The modem apparatus comprises a storage device which stores a predetermined number of squared difference values. The predetermined number of the squared difference values corresponds to the sampling number of the cyclic prefix signal. The modem apparatus comprises an adder which sums the squared difference values stored in the storage device and a controller which compares the summed value with a predetermined threshold value, determines that the cyclic prefix signal is detected when the summed value is smaller than the predetermined threshold value, and detects the second data unit in the initializing signal, based on the detection of the cyclic prefix signal. Claim 19 recites a related method.

In direct contrast, DO et al. relates to a FFT window recovery apparatus which receives an OFDM symbol comprising a useful data interval and a guard interval. The FFT window recovery apparatus converts the received OFDM symbol into a digital complex sample, detects a power difference between the digital complex samples, and detects a position having minimum absolute value of the power difference between the digital complex samples as a symbol start position. In other words, the FFT window recovery apparatus detects the time of the minimum value as the symbol starting point and moves the FFT window position, based on the detected position.

However, DO et al. does not disclose a modem apparatus operating in accordance with an ADSL system. DO et al. also does not a modem apparatus which

receives an initializing signal utilized for the ADSL system. Further, DO et al. does not disclose a modem apparatus which receives the initializing signal that includes a first data unit without a cyclic prefix signal and a second data unit with the cyclic prefix signal, the second data unit being received following the first data unit. Furthermore, DO et al. does not disclose a controller which detect the second data unit in the initializing signal, based on detection of the cyclic prefix signal. Thus, the present invention is clearly distinguished over DO et al. Contrary to the Examiner's assertion, DO et al. does not relate to or even mention a Cyclic Prefix signal and clearly not at page 4, lines 5-11.

Further, with respect to claim 13, DO et al. merely discloses detecting a position having minimum absolute value of the power difference between the digital complex samples. Thus, DO et al. does not teach a controller which determines that the cyclic prefix signal is detected, when a second summed value is smaller than the predetermined threshold value after it is determined that a first summed value is smaller than the predetermined threshold value, and when an interval between the determinations of the first summed value and the second summed value corresponds to the predetermined number of samples, as recited in claim 13. In this regard, DO et al. does not disclose or suggest any of these features, and thus claim 13 is clearly distinguished over DO et al. at least for these additional reasons.

Furthermore, with respect to claim 14, DO et al. merely teaches detecting a position having minimum absolute value of the power difference between the samples. Thus, DO et al. does not disclose a controller which counts the number of times that the summed value is smaller than the predetermined threshold value, and which

determines that the cyclic prefix signal is detected when the counted number of times reaches a predetermined number, as recited in claim 14. In this regard, DO et al. does not disclose or suggest any of these features, and thus at least claim 14 is clearly distinguished over DO et al. at least for these additional reasons.

Therefore, it is respectfully submitted that the features recited in Applicants' claims 12-19 are also not disclosed in DO et al. cited by the Examiner.

With respect to the rejection of claims 6-8 under 35 U.S.C § 103(a), the Examiner submits that "the use of OFDM in an environment of a modem or xDSL, wherein the broadband is divided into a multi-carrier, as is the situation with OFDM is well known in the art." However, since DO et al. relates to a digital TV broadcast (see. page1, lines 19-22), DO et al. does not disclose detecting a cyclic prefix signal during receiving of the initializing signal which includes a first data unit without a cyclic prefix signal and a second data unit with the cyclic prefix signal, the second data unit being received following the first data unit. DO et al. also does not disclose detecting the second data unit in the initializing signal, based on detection of the cyclic prefix signal. Thus, the Examiner has not set forth any proper evidence for modifying the teachings of DO et al. in order to detect the cyclic prefix signal during receiving of the initializing signal and further in order to detect the second data unit in the initializing signal, based on detection of the cyclic prefix signal.

Thus, it is respectfully submitted that the features recited in Applicant's claims corresponding to the features related in previously pending claims 6-8 are not also disclosed in DO et al. cited by the Examiner. The features of pending claims also are clearly distinguished from DO et al. cited by the Examiner, since DO et al. does not

disclose the above features recited in Applicants' claims. Thus, the pending claims are submitted to be patentable over the Examiner's asserted reference.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the outstanding objections and rejections, and an indication of the allowability of all the claims pending in the present application in due course.

SUMMARY AND CONCLUSION

Applicants have made a sincere effort to place the present application in condition for allowance and believe that they have now done so. Applicants have amended the abstract, specification, and claims to overcome all objections and rejections. Applicants have canceled the rejected claims without prejudice and disclaimer and have submitted new claims for consideration by the Examiner. With respect to the pending claims, Applicants have clarified the subject matter thereof and have pointed out the deficiencies and shortcomings of the cited reference with respect to the recitations of claims. Accordingly, Applicants have provided a clear evidentiary basis supporting the patentability of all claims in the present application and respectfully request an indication of the allowability of all the claims pending in the present application, in due course.

The amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should the Examiner have any questions or comments regarding this Response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
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